Symposium

Nature and Man: From the Perspective of Food

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Tomomi Ishii (Rakuno Gakuen University)

I had an opportunity to go to Mongolia beginning in 1996. Mongolia's doors had long been closed to the rest of the world until the country's democratization in 1991. I undertook research while staying with nomads. Today, I'd like to talk about my experience during that stay.

In terms of the eating habits in Mongolia, you might like to compare them with those in Japan. Eating habits in Japan have gone through tremendous changes since the end of World War II. A farm family consisting of 4 adults and 3 children in Chiba in 1918, as shown here, obtained over 70% of their energy from rice – a plant. The energy obtained from rice by modern Japanese has fallen by almost half. However, rice used to be the main energy source for Japanese people, and the eating habits of Japanese people depended greatly on cereals or plants in the past.

Meanwhile, Mongolian nomads obtain a lot of their energy intake from animal- rather than plant-based foods.

I set my observation points on Burud steppe in Oborkhangai province located about 350 km southwest of the Mongolian capital, Ulan Bator. As Burud is located very high above sea level and is sparsely populated, germs find it harder to grow and the area provides an ideal environment for the "fermentation" of microorganisms that have adapted themselves to the cool environment.

The population in Mongolia has increased from 1.5 million just after the end of World War II to approximately 2.5 million today, of which about 400,000 are nomads. Mongolia is the only country in the world where the number of nomads is increasing. The population density in Mongolia is very low with only 1.4 people per square kilometer. By contrast, the population density in Japan is 340 people per square kilometer. According to statistics for 2004, the average life expectancy in Mongolia is 61 years for men and 64

years for women.

The Mongolian nomads keep sheep, goats, cows, horses and camels, all of which are typically kept by nomads throughout the world. They milk the sheep, but the amount of milk they obtain is small. The number of goats being kept for cashmere has been increasing greatly in recent years. Typically, sheep account for 80% and goats 20% of the animals kept by nomads.

Most people will think of sheep and goats when it comes to nomads. However, in Mongolia, the nomads obtain most of their milk for milk products from cows. The nomads used to keep cows as working animals and only started to milk them in the 19th century.

They milk all the animals twice a day – in the morning and the evening, except for horses, which produce less milk at one time. They milk their horses 8 times a day. They keep camels for milking in dry regions as well as for carrying loads. Livestock are important to the nomads and they pay careful attention to their health. Eating their livestock decreases their wealth. Preserving milk products by processing fresh milk is a reasonable way for the nomads to obtain food without adversely affecting their wealth.

I learned that the nomads cannot move around freely. They need to obtain land certificates to be nomads, and can move only within the province in which they reside. The families I surveyed move about 200 kilometers per year mainly between summer and winter camps and occasionally move with small tents for the purpose of fattening their livestock. These movings are called “otor”.

I found the nomads for my survey in the following manner: I asked a person “Where are they?” while showing him a picture of a family that was taking part in my survey. As all of the nomads know each other well, I then asked him to guide me to the family. The guide would use his horse in the early days and this was then replaced with a bike. Last August, the person contacted the family via his prepaid mobile phone, as the service had become available two months earlier, before guiding me to the family on his bike.

The environment surrounding the nomads has gone through tremendous changes in the past decade or so and so have their eating habits. I am

especially interested in the impact that the rapid proliferation of mobile phones among the nomads will have on their lives in the grasslands.

As many people throughout the world are born with the lactose intolerance gene, I believe the nomads, and especially the adults, used to use milk to produce butter and cheese and not for drinking.

The amount of homemade milk products and meats consumed in Mongolia varies depending on the season. The consumption of milk products increases in the summer while meat consumption increases in the winter.

They process the milk based on their understanding of the properties of milk gained by experience. They mix the milk from sheep, goats and cows to make processed milk products but not the milk from camels and horses. At first, they seem to be processing the milk in an arbitrary way, but when you examine the milk using a thermometer and a pH meter, the characteristics are quite accurate. This means they can produce milk products of consistent quality.

The most conspicuous feature of the processed milk products in Mongolia is the fermentation container. The container contains different mixtures of bacterial floras (mixtures of bacterial groups) at each gel. They can preserve milk in good condition by fermenting it in the container, and can then process it in different ways at different times.

Such homemade milk products are served as meals in Mongolia. They eat the homemade milk products and drink milk tea in the morning. They serve a lot of milk products to their guests. They do not serve these homemade milk products when they serve homemade horse milk liquor. This is because the Mongolian nomads consider this liquor to be tantamount to a meal.

The horse milk liquor is a low-alcohol beverage made from horse milk and is an important ethnic drink. The Mongolian nomads, both young and old, constantly drink this liquor during the summer when it is produced.

The fermentation container, which is essential for producing the horse milk liquor, is made of leather from a 7-year old cow folded over to create a bag. This is called a “fuful” and lasts for 7 to 10 years. The bag contains about 6 types of lactobacillus and 2 or 3 types of yeast. This constitutes a microorganism mixture that optimizes the fermentation of the horse milk liquor. For this reason, the taste of the liquor varies from family to family.

The horse milk liquor resembles raw sake but the alcohol content is only around 2.5%. As they do not consider it an alcoholic beverage, parents encourage their babies and children to drink it.

My survey shows that each adult nomad male drinks an average of 4 liters a day. As 1 liter of the liquor contains about 400 kilocalories, 4 liters amounts to 1,600 kilocalories, almost enough for a day at the basal metabolic rate. In areas where the liquor is heavily consumed many people drink as much as 10 liters a day.

The horse milk liquor contains a large amount of vitamin C and I believe nomads ingest the vitamins they require through the horse milk liquor as they eat hardly any vegetables or fruits. The wisdom and techniques acquired through such experience are passed on to the next generation in this steppe region.

In the winter, in addition to the milk products produced in the summer, they eat some of their livestock that have become too weak to live through the winter. The butchered meat is formed into blocks and frozen naturally outside. After butchering the meat, they first boil the internal organs to eat, because they cannot be preserved. The blood is collected in the intestines to create blood sausages, which are then placed in cold water together with the internal organs and boiled. The boiled water containing nutrients from the organs is used as soup. They start to eat the meat only after consuming all of the internal organs. They use every part of the slaughtered livestock including the membrane, skin, muscle and fat. They waste nothing.

Of course, livestock in Mongolia are not fed with mixed feed unlike livestock in Japan. In the winter they eat withered grasses by digging them up with their hooves. For this reason, by the end of the winter the livestock are lean and the nomads do not slaughter them for a while in the spring.

I was impressed by a comment made about food by the nomads: "Vegetables are grasses. Livestock eat grasses. We eat the livestock so we do not need to eat vegetables."

Let me turn to the daily lives of the nomads. When I first visited the dwellings of the nomads for my survey, it was pretty dark at night once you blew out the candles. Later, they purchased Chinese-made power generators to listen to the radio and to provide light at night. Then, they purchased TV sets and recently DVDs and many other electronic appliances. I cannot say if such changes are good or bad, but it is apparent that such changes are

rapidly transforming traditional life in the grassland.

The nomads buy flour with cash. Flour is easy to preserve and process, tastes good and gives a long-lasting feeling of fullness after it is eaten. This makes the Chinese-made flour an indispensable food ingredient in their lives although the impact of neighboring China is small. The Mongolian nomads eat meals twice a day – breakfast and supper. They often eat hot noodles for supper.

I checked the minerals contained in the nomads' hair and found large quantities of phosphorus and iodine. I was surprised by the fact that their hair contained an excessive amount of iodine while it is not surprising to find it in the hair of Japanese men and women who frequently eat processed foods. Refined salt containing iodine supplied through various international aid agencies, instead of rock salt, are available in Mongolia. If such international food aid is the cause of the excessive amount of iodine intake by the Mongolian nomads, the Mongolian nomads may then differ from Europeans living in the similar inland areas who tend to consume insufficient iodine. And I'm afraid such food aid may not necessarily be good for the Mongolian nomads.

Mongolian nomads are sensitive to salty foods and the salt intake of the families I surveyed has tripled in the past decade since the flour consumption began to increase. They consume the flour, which they cannot produce by themselves, in the form of noodles while eating traditional meals of milk products in the summer and meat in the winter. I believe that the fact that they drink all of the soup in the noodles is partly to blame for the increase in their salt intake.

A conspicuous feature of the nomads' eating habits is the very effective way they use the milk and meat obtained from their livestock. They waste nothing from their livestock including the meat, skin, muscle and marrow, and they continue to eat the slaughtered livestock until nothing is left.

Such eating habits remind me of questions often discussed in Japan – "What are real foods?" and "What is real affluence?" In Mongolia, the process of transforming living animals into essential foods for human beings is part of their daily lives. They naturally have great respect for life and waste nothing of the animals they kill. I see a noble spirits in their satisfaction and humbleness in their eating habits. Their meals appear simple but I believe we can learn a lot from their invisible affluence.